Suisun Marsh Managed Wetlands Enhancement Opportunities

By

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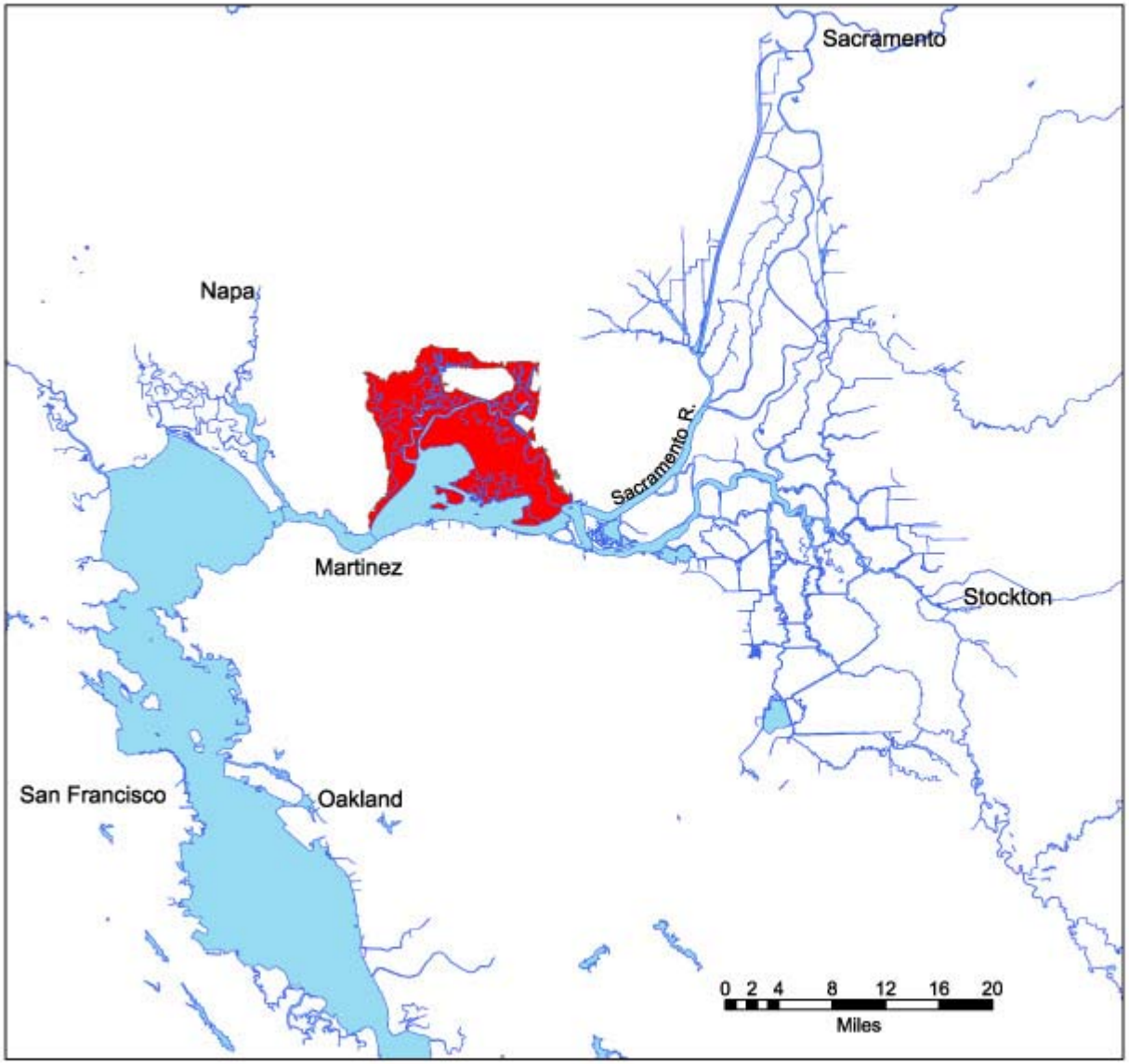
Executive Director

Suisun Resource Conservation District

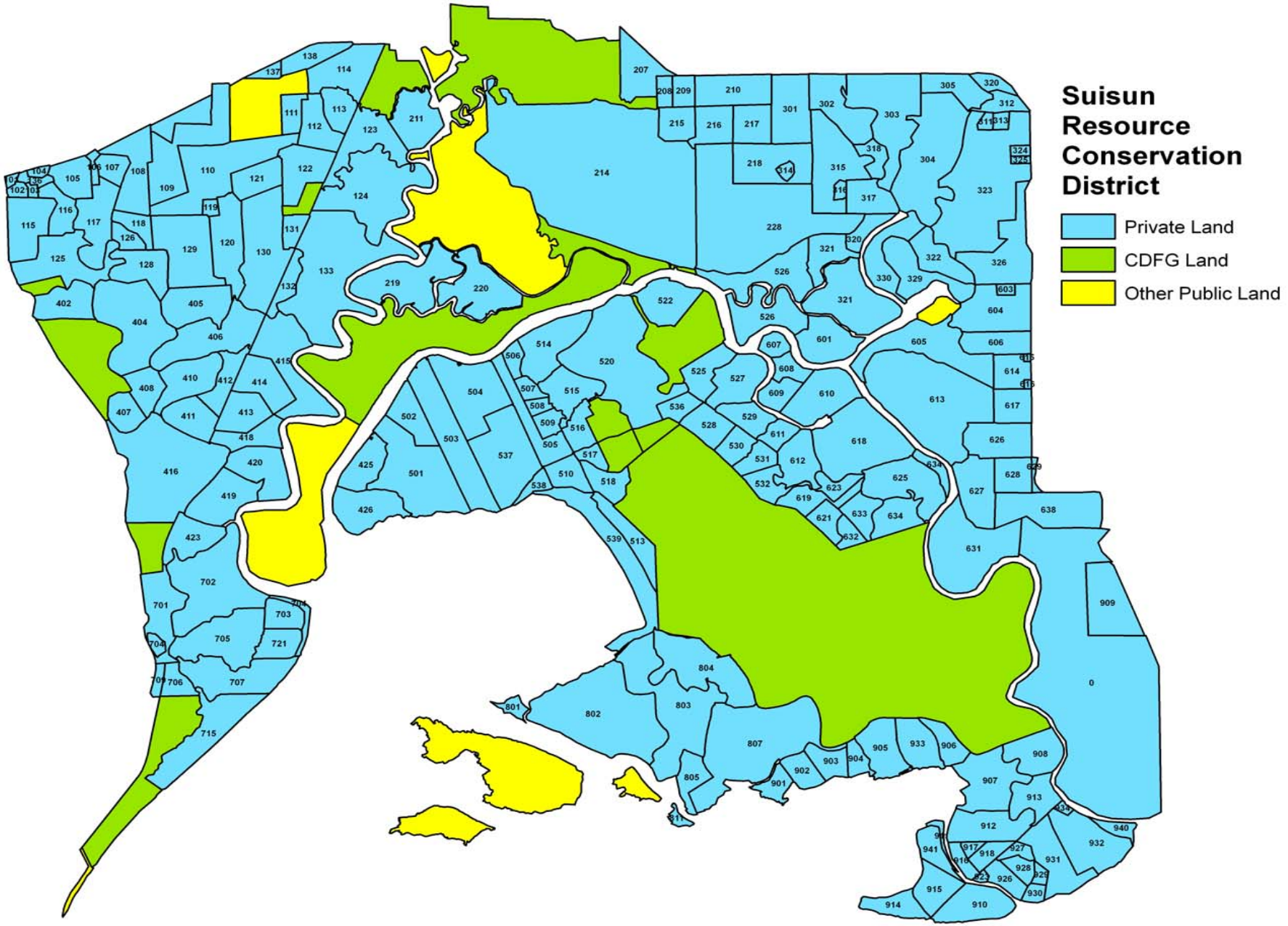

Tidal Restoration
Managed Wetlands
Suisun Marsh Plan
At-Risk Species
Levees
Water Quality

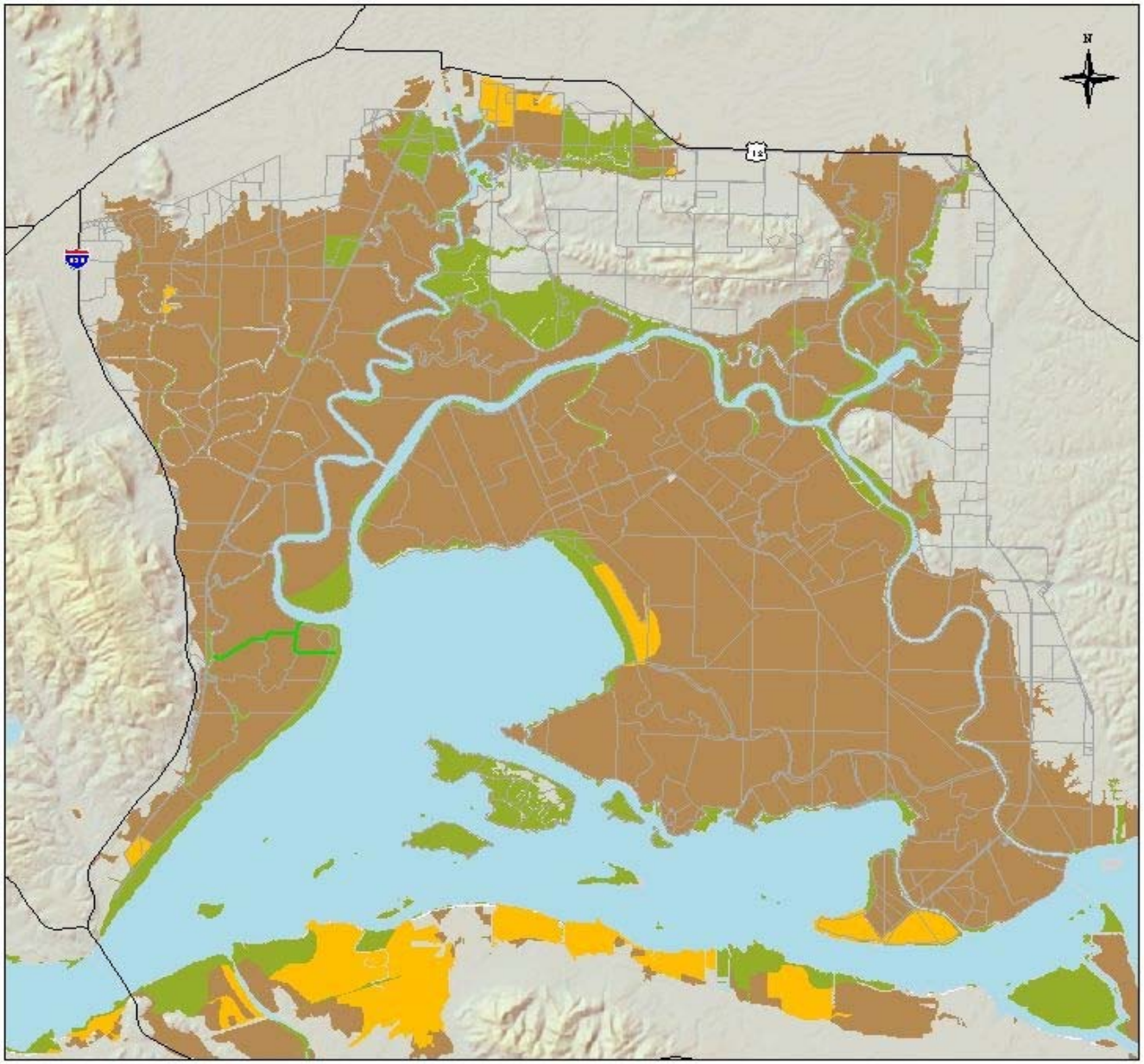
Suisun Marsh Location



CA Dept. of Water Resources
Suisun Marsh Planning
November 2002

data source: USGS 1:24k hydrography


Suisun
Resource
Conservation
District
Private Land
CDFG Land
Other Public Land


N
Marsh Types of Suisun
Tidal Marsh
Muted Tidal Marsh
Managed Marsh
Source: 1998 SF Bi EcoAtlas
SAN FRANCISCO ESTUARY
SCIENCE CONSORTIUM
2 0 2 Kilometers

Goals of Suisun Marsh Wetland Management

- **Provide Wintering Waterfowl Habitat**
- **Provide Habitat for Resident Breeding Waterfowl and Ground Nesting Birds**
  - **Upland nesting habitat**
  - **Permanent ponds and brood rearing habitat**
- **Sustain Hunting Opportunities and Experience**
- **Maintain and Enhance Wetland Conditions for Resident and Migratory Species**
- **Habitat Stewardship Protects Open Space and Wetland Habitats from Development**

Wintering Habitat

Provide Food Resources for Wintering & Resident Waterfowl

Nesting Habitat

Breeding

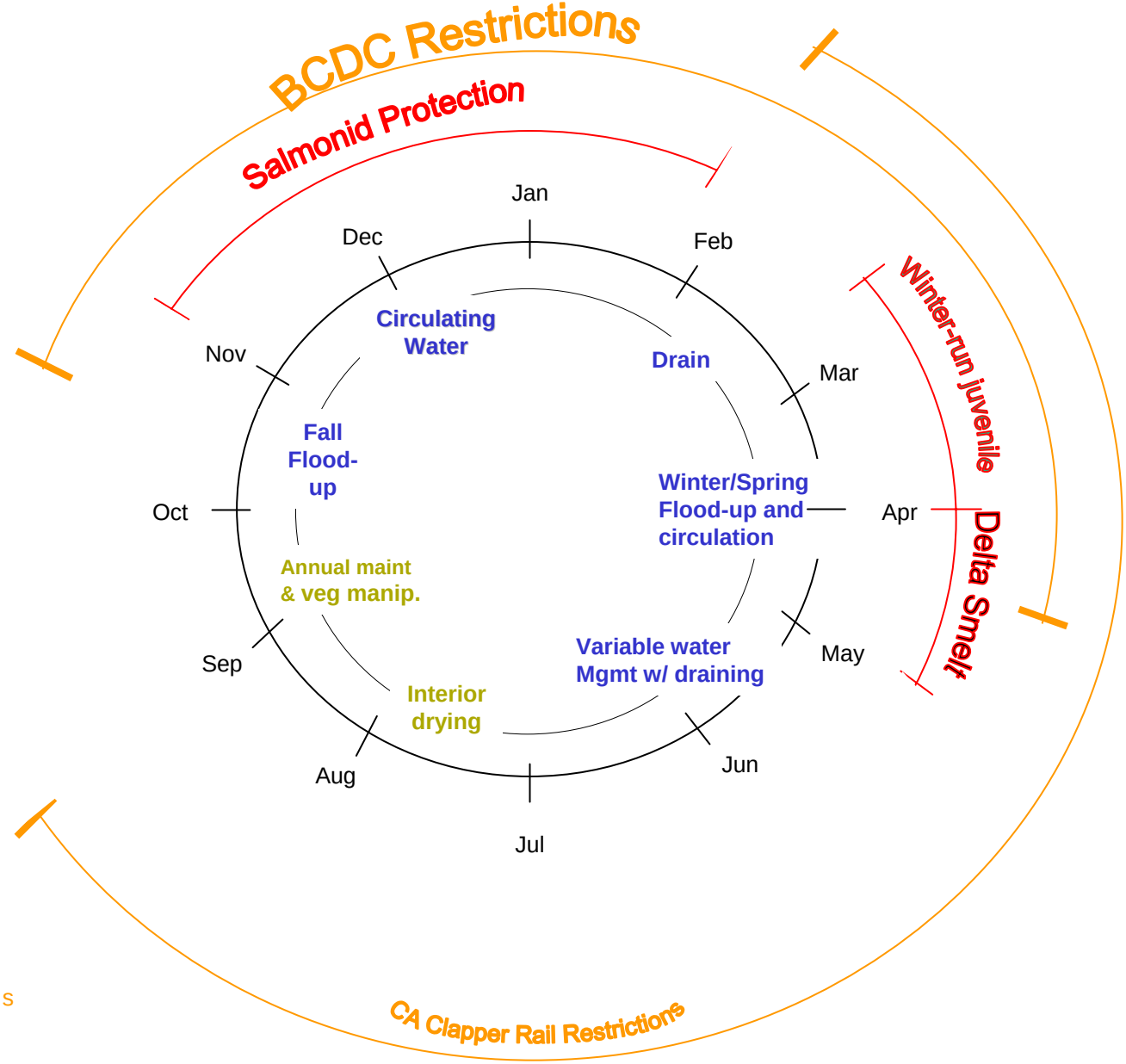

Breeding Shorebirds

Constraints to Managed Wetland Operations and Maintenance

- Physical Constraints
- Wetland Soil Types
- Wetland Elevation and Topography
- Water Control Infrastructure and Facilities
- Environmental Constraints
- Properties Geographic Location in Relation to Salinity Gradients
- Applied Water Salinity
- Yearly Climatic Conditions
  - Rain fall
  - Temperature
  - Seasonal Variability
- Regulatory Constraints
- Fiscal Constraints

Draft Conceptual Model

Suisun Marsh Managed Wetlands Existing Management Cycle



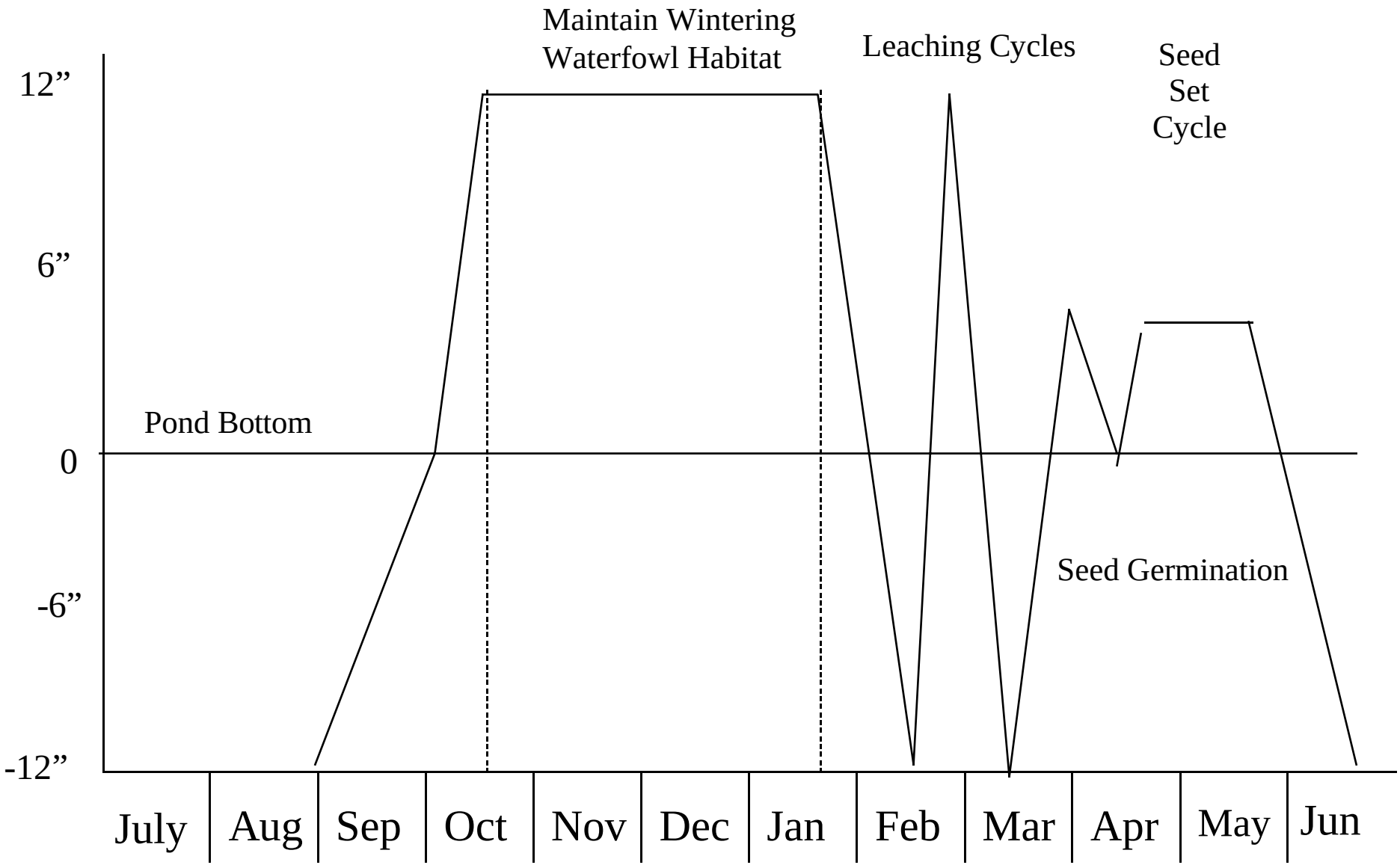
Habitat Restrictions

Species closures

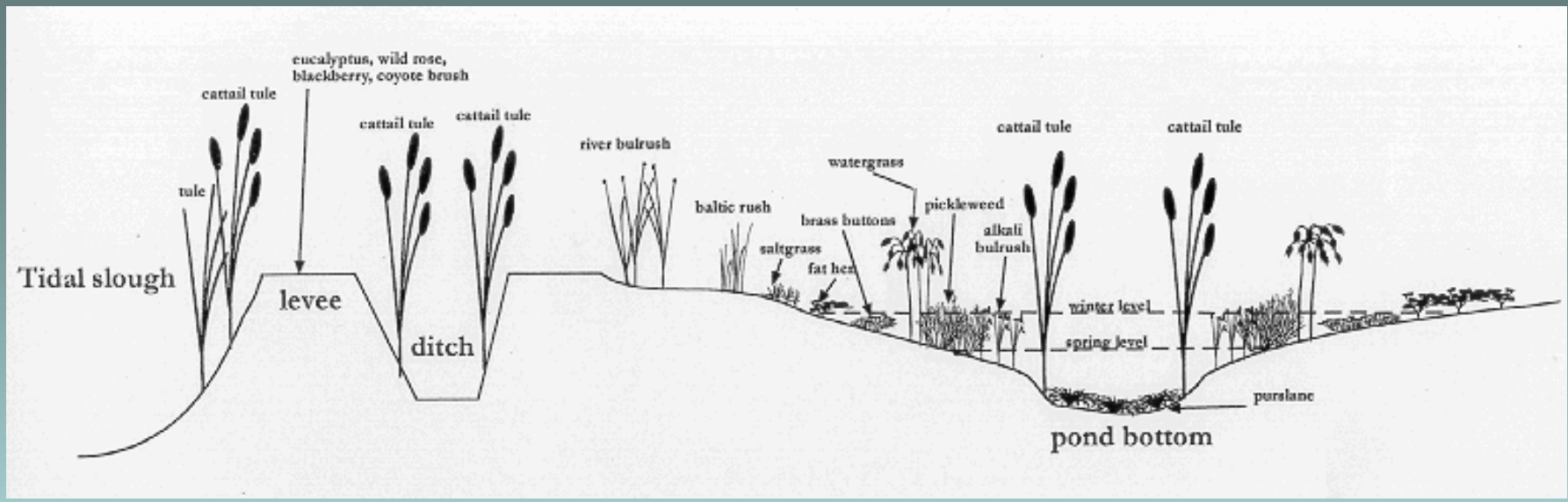
Flooding Regimes

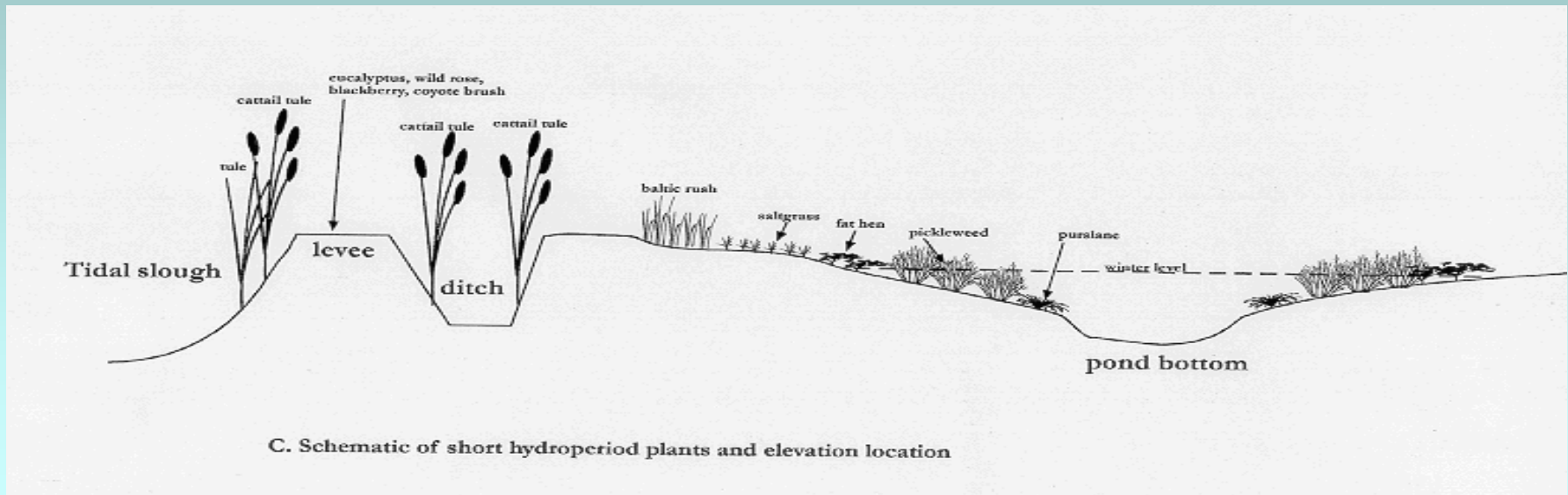
- Long Hydroperiod
  - Pond(s) inundated for more than 6 months
- Short Hydroperiod
  - Pond(s) inundated for less than 6 months

Long Hydroperiod
Water Management Schedule



Long Hydroperiod vs. Short Hydroperiod





C. Schematic of short hydroperiod plants and elevation location

Managed Wetlands Enhancement

- Ditches
  - Cleaning
  - Constructing new interior ditches
- Levee Improvements
  - Coring
  - Raising Crown Heights
- Pond bottom grading
- Water control Infrastructure
  - Pipe replacement /Upgrade to plastic
  - Installation of new structures
  - (gates, risers, couplers, etc.)
  - Fish Screens
- Discing
- Operation of Drainage Pumps

Water Control Installation


Fish Screened Diversions


Drainage Improvements

Pond Bottom Grading

Poor Water Conveyance Facility

New Water Conveyance Ditch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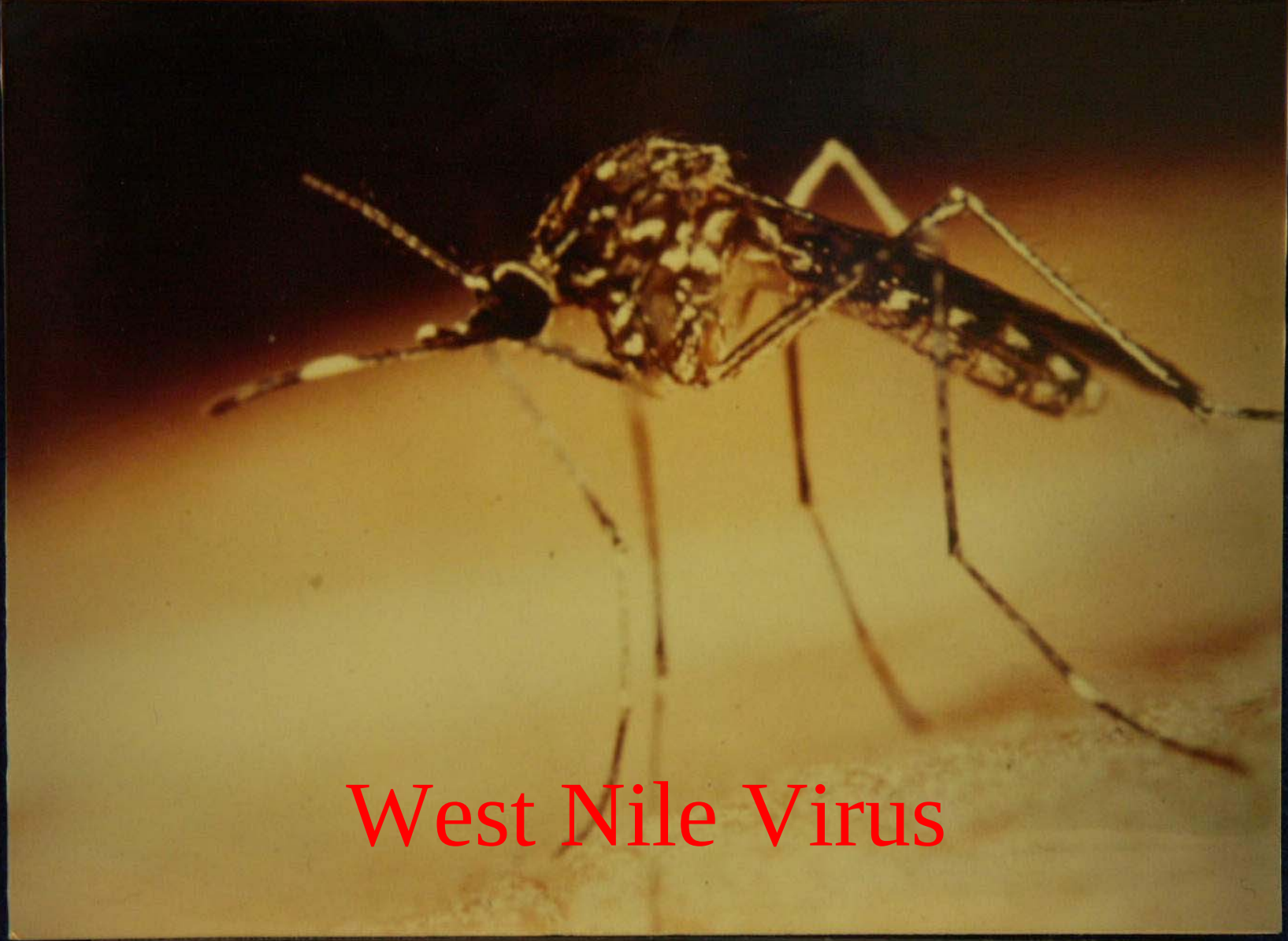
Fire as a Tool for Habitat Management



Culex tarsalis

This species is considered to be the primary vector of encephalitis viruses in California which now includes West Nile Virus in addition to Western Equine and St. Louis Encephalitis viruses.

Scientific Uncertainties

- **Develop New Marsh Management Strategies**
  - **Enhancement of existing wetland values and functions**
  - **Compatibility with ESA/native species recovery**
- **Existing Managed Wetland Waterfowl Food Resource Production and Availability**
- **Improve understanding of soil chemistry, leaching, acid sulfate soil reactions, DO, and methyl mercury.**


www.delta.dfg.ca.gov/suisunmarsh/charter
Curtis Hagen, DFG